REMARKS

Claims 1-25 were pending in the Application. Claim 1 is an independent claim and claims 2-16 depend there from. Claim 17 is an independent claim and claims 18-23 depend there

from. Claim 24 and 25 are independent claims. Claims 1-5, 10-11, 17, 21 and 24-25 are

currently amended. Applicant respectfully requests reconsideration of the application in light of

the following remarks.

Rejections Under 35 U.S.C. §102(e) - Pandya (Claims 1-3, 16 and 17)

On pages 2-5 of the Office Action, claims 1-3, 16 and 17 were rejected under 35 U.S.C.

§102(e) as being anticipated by Pandya (U.S. Patent No. 7,376,755). Without acknowledging that Pandya qualifies as prior art under 35 U.S.C. §102(e), the Applicant respectfully traverses

the rejections for at least the following reasons.

With regard to the anticipation rejections, MPEP 2131 states, "[a] claim is anticipated

only if each and every element as set forth in the claim is found, either expressly or inherently

described, in a single prior art reference," Verdegaal Bros, v. Union Oil Co. of California, 814

F.2d 628, 631 2 USPO2d 1051, 1053 (Fed.Cir. 1987). MPEP 2131 also states, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v.

Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Regarding claims 1 and 17, the Applicant respectfully submits that Pandya fails to teach.

suggest, or disclose, for example, "wherein a one-shot initiation process of an RDMA operation

is performed between the driver and the NIC of the host, the one-shot initiation process

comprising communicating a single command message comprising: buffer command

information, and a write command to write a send command," as set forth in independent claim

1; and "wherein a one-shot completion process of an RDMA operation is performed between the

driver and the NIC of the host, the one-shot completion process comprising communicating a

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single completion message comprising: a send complete indication, and buffer freeing status information," as set forth in independent claim 17.

With regard to claim 1, the Office Action acknowledged that Pandya discloses registering RDMA buffers before issuing the read or write command (i.e., multiple steps). (Office Action, Page 22). However, the Office Action alleged that a "one-shot initiation process" could be interpreted as multiple steps because a "one-shot initiation process" was not defined in the claims. The Applicant has amended independent claim 1 to clarify that the one-shot initiation process comprises "communicating a single command message comprising; buffer command information, and a write command to write a send command." Because, as acknowledged by the Examiner, Pandya clearly discloses registering RDMA buffers before issuing the read or write command (i.e., multiple steps), Pandya cannot disclose "wherein a one-shot initiation process of an RDMA operation is performed between the driver and the NIC of the host, the one-shot initiation process comprising communicating a single command message comprising; buffer command information, and a write command to write a send command," as recited in Applicant's independent claim 1. Because the Office Action has failed to show "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference" as required for an anticipation rejection under MPEP 2131, the rejection under 35 U.S.C. § 102(e) cannot be maintained.

Additionally, the Office Action alleges that Pandya's Figures 35 and 37 disclose a single command 3510, 3701. (Office Action, Page 23). However, the Applicant notes that Pandya's single command 3510, 3701 is merely a read or write command issued after the buffers are registered. (Pandya, Column 34, Lines 20-24 and Column 34, Line 66 — Column 35, Line 3). Thus, Pandya's single command cannot be "a single command message comprising: buffer command information, and a write command to write a send command," as set forth in Applicant's independent claim 1. Further, the Office Action's arguments in the Response to Arguments section of the Office Action are inconsistent with its arguments in the actual rejection of claim 3 set forth in the Office Action. Specifically, in the Response to Arguments section, the Office Action alleges that 3501 is merely a step in a process and not a command, but in rejecting

claim 3, the Office Action refers to 3501 as a "Register RDMA Buffers command request 3501." Regardless, as explicitly stated in Pandya specification, Pandya registers buffers prior to issuing a read or write command. Thus, Pandya cannot disclose "wherein a one-shot initiation process of an RDMA operation is performed between the driver and the NIC of the host, the one-shot initiation process comprising communicating a single command message comprising: buffer command information, and a write command to write a send command," as recited in Applicant's independent claim 1.

The Applicant further notes that Tillier fails to remedy the deficiencies of Pandya. For example, the Office Action points to Tillier's "Map Buffer 506" of Figure 5 as showing a command to bind a portion of pinned-down memory buffers of the host to a steering tag (STag). (Office Action, Page 6). However, the disclosure in Tillier corresponding to the "Map Buffer 506" step in Figure 5 merely discusses the processing of I/O request 203-3 in connection with the operation of the emulation service layer 103-3 in the I/O device 103. (See e.g., Tillier, Figures 1-2 and 5; Column 7, Lines 27-50; Column 6, Lines 36-41). Put another way, Tillier's disclosure regarding its emulation service laver 103-3 in its I/O device 103 is completely unrelated to commands sent between a driver and an NIC in Tillier's host 101. In fact, nowhere in Tillier is there any mention of communications between an NIC and a driver of Tillier's host 101. Rather, Tillier fails to describe its initiation process occurring at its host, let alone disclosing a one-shot initiation process as defined in Applicant's independent claim 1. Thus, Tillier's disclosure regarding mapping buffers in its I/O unit fails to remedy the deficiencies of Pandya in that the combination of Pandya and Tillier clearly fail to disclose "wherein a one-shot initiation process of an RDMA operation is performed between the driver and the NIC of the host, the one-shot initiation process comprising communicating a single command message comprising; buffer command information, and a write command to write a send command," as recited in Applicant's independent claim 1.

Further, the Office Action alleges that Tillier's Figure 2, 201-2, 201-3 further shows and discloses a system wherein the single command message further comprises a command to write a send command. (Office Action, Page 7). Again, as mentioned above, nothing in Tillier teaches

communications between a driver and NIC of Tillier's host 101. Tillier's disclosure of its host generating a sending its I/O unit a message fails to remedy the deficiencies of Pandya in that the combination of Pandya and Tillier clearly fail to disclose "wherein a one-shot initiation process of an RDMA operation is performed between the driver and the NIC of the host, the one-shot initiation process comprising communicating a single command message comprising: buffer command information, and a write command to write a send command," as recited in Applicant's independent claim 1.

With regard to claim 17, the non-final Office Action alleges that Pandya discloses "wherein a one-shot completion process of an RDMA operation is performed between the driver and the NIC of the host (Fig. 35 that shows a one-shot completion process 3507-3509 of an RDMA operation; column 34, lines 19-30 disclose the same details; Fig. 37 further shows the corresponding one-shot completion process 3710-3712 of an RDMA write operation; column 34, lines 65-67 thru column 35, lines 1-15 further disclose the details of the completion process for a write operation)." (Office Action, Pages 4-5).

Pandya's steps 3507-3509 in Figure 35 merely show that the target sends the initiator an indication that operation is complete, without detailing the specifics of the process. (Pandya, Figure 35). Further, steps 3507-3509 are not mentioned in the specification of Pandya. In Column 34, Lines 19-30 as cited in the Office Action, Pandya merely states that "[t]he operation completion is indicated using the command completion response." (Pandya, Column 34, Lines 29-30). Nowhere in Pandya is there any disclosure regarding the specifics of a completion process between a NIC and a driver of a host. Clearly, the cited sections of Pandya fail to disclose "wherein a one-shot completion process of an RDMA operation is performed between the driver and the NIC of the host, the one-shot completion process comprising communicating a single completion message comprising: a send complete indication, and buffer freeing status information," as set forth in independent claim 17. Because the Office Action has failed to show "each and every element as set forth in the claim is found, either expressly or inherently

described, in a single prior art reference" as required for an anticipation rejection under MPEP 2131, the rejection under 35 U.S.C. § 102(e) cannot be maintained.

Further, Pandya's steps 3510-3712 in Figure 37 merely show that the target sends the initiator an indication that operation is complete, without detailing the specifics of the process. (Pandya, Figure 37). Further, steps 3710-3712 are not mentioned in the specification of Pandya. In Column 35, Lines 1-15 as cited in the Office Action, Pandya merely states that "[o]nce the data transfer is complete the completion status is transported to the initiator and the command completion is indicated to the host." (Pandya, Column 35, Lines 13-15). Nowhere in Pandya is there any disclosure regarding the specifics of a completion process between a NIC and a driver of a host. Clearly, the cited sections of Pandya fail to disclose "wherein a one-shot completion process of an RDMA operation is performed between the driver and the NIC of the host, the one-shot complete indication, and buffer freeing status information," as set forth in independent claim 17. Because the Office Action has failed to show "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference" as required for an anticipation rejection under MPEP 2131, the rejection under 35 U.S.C. § 102(e) cannot be maintained.

The Applicant further notes that Tillier fails to remedy the deficiencies of Pandya. For example, the Office Action points to Tillier's steps 604-606 of Figure 6 as disclosing a NIC of a host de-associating STag values with the pinned memory in the host, with previously associated SGL information, and otherwise freeing resources dedicated to information regarding the pinned memory. (Office Action, Pages 8-9). However, Tillier's steps 604-606 in Figure 6 and the supporting disclosure merely discuss the completion process performed at the emulation service layer 103-3 in the I/O device 103. (See e.g., Tillier, Figures 1-2 and 6; Column 8, Lines 3-15; Column 6, Lines 48-54). Put another way, Tillier's disclosure regarding its emulation service layer 103-3 in its I/O device 103 is completely unrelated to commands sent between a driver and an NIC in Tillier's host 101. In fact, nowhere in Tillier is there any mention of communications between an NIC and a driver of Tillier's host 101. Rather, Tillier fails to describe its completion

process occurring at its host, let alone disclosing a one-shot completion process as defined in Applicant's independent claim 17. Thus, Tillier's disclosure regarding freeing resources in its I/O unit 103 fails to remedy the deficiencies of Pandya in that the combination of Pandya and Tillier clearly fail to disclose "wherein a one-shot completion process of an RDMA operation is performed between the driver and the NIC of the host, the one-shot completion process comprising communicating a single completion message comprising: a send complete indication, and buffer freeing status information," as recited in Applicant's independent claim 17.

Further, the Office Action alleges that Tillier's Figure 8 "Pointer to 'A" discloses a system wherein the NIC receives a message comprising an optional field carrying a STag value, the STag value being associated with pinned memory in a remote host. (Office Action, Page 8). However, the "Pointer to A" in Tillier's Figure 8 is the purpose of the message, and is therefore clearly not part of an <u>optional</u> field of the message. Further, the pointer to A is not associated with pinned memory in a <u>remote</u> host, but to data in the host itself. Again, as mentioned above, nothing in Tillier teaches communications between a driver and NIC of Tillier's host 101. Tillier's disclosure of its host receiving a "Pointer to A" message fails to remedy the deficiencies of Pandya in that the combination of Pandya and Tillier clearly fail to disclose "wherein a one-shot completion process of an RDMA operation is performed between the driver and the NIC of the host, the one-shot completion process comprising communicating a single completion message comprising: a send complete indication, and buffer freeing status information," as recited in Applicant's independent claim 17.

Therefore, for at least the above stated reasons, Applicant respectfully submits that the Pandya reference fails to teach, suggest, or disclose Applicant's invention as set forth in claims 1 and 17. The Applicant believes that claims 1 and 17 are allowable over Pandya. Applicant respectfully submits that claims 1 and 17 are independent claims, and that claims 2-16 and 18-23 depend either directly or indirectly from independent claims 1 and 17, respectively. Because claims 2-16 and 18-23 depend from claims 1 and 17, respectively, Applicant respectfully submits that claims 2-16 and 18-23 are allowable over the Pandya reference, as well. The Applicant also

submits that each of Applicant's claims 2-16 and 18-23 is independently allowable. The Applicant respectfully requests, therefore, that the rejection of claims 1-3 and 16-17 under U.S.C. §102(e), be withdrawn.

Rejections Under 35 U.S.C. §103(a) - Pandya and Tillier (Claims 4-5, 10, 18, 20 and 22-23)

Claims 4, 5, 10, 18, 20, 22 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Pandya in view of Tillier (U.S. Patent No. 6,421,742). The Applicant respectfully traverses the rejection for at least the following reasons. Claims 4, 5, 10, 18, 20, 22 and 23 depend from independent claims 1 or 17. Applicant believes that claims 1 and 17 are allowable over the proposed combination of references, in that Tillier fails to overcome the deficiencies of Pandya, for at least the reasons set forth above. Because claims 4, 5, 10, 18, 20, 22 and 23 depend from independent claims 1 or 17, Applicant respectfully submits that claims 4, 5, 10, 18, 20, 22 and 23 are allowable over the proposed combination of Pandya and Tillier, as well. The Applicant further submits that each of claims 4, 5, 10, 18, 20, 22 and 23 is independently allowable.

For example, with regard to Applicant's dependent claim 4, the Office Action points to Tillier's "Map Buffer 506" of Figure 5 as showing a command to bind a portion of pinned-down memory buffers of the host to a steering tag (STag). (Office Action, Page 6). However, the disclosure in Tillier corresponding to the "Map Buffer 506" step in Figure 5 merely discusses the processing of I/O request 203-3 in connection with the operation of the emulation service layer 103-3 in the I/O device 103. (See e.g., Tillier, Figures 1-2 and 5; Column 7, Lines 27-50; Column 6, Lines 36-41). Put another way, Tillier's disclosure regarding its emulation service layer 103-3 in its I/O device 103 is completely unrelated to commands sent between a driver and an NIC in Tillier's host 101. In fact, nowhere in Tillier is there any mention of communications between an NIC and a driver of Tillier's host 101. Thus, Tillier's disclosure regarding mapping buffers in its I/O unit fails to remedy the deficiencies of Pandya in that the combination of Pandya and Tillier clearly fail to disclose "wherein the buffer command information comprises a

command to bind a portion of the pinned-down memory buffers of the host to a steering tag (STag)," as recited in Applicant's dependent claim 4.

Further, with regard to Applicant's dependent claim 10, the Office Action alleges that Tillier's disclosure of the host sending a message to the I/O unit, wherein the I/O unit maps buffers, discloses "wherein the buffer command information provides a description of a section of memory," as recited in Applicant's dependent claim 10. (Office Action, Pages 7-8). However, as discussed above, Tillier's disclosure of messages sent between a host and an I/O unit is completely unrelated to communications between a driver and an NIC of a host. Nothing in Tillier teaches communications between a driver and NIC of Tillier's host 101. Tillier's disclosure of its host generating a sending its I/O unit a message fails to remedy the deficiencies of Pandya in that the combination of Pandya and Tillier clearly fail to disclose "wherein the buffer command information provides a description of a section of memory," as recited in Applicant's dependent claim 10.

Additionally, with regard to Applicant's dependent claim 18, the Office Action alleges that Tillier's Figure 8 "Pointer to 'A" discloses a system wherein the NIC receives a message comprising an optional field carrying a STag value, the STag value being associated with pinned memory in a remote host. (Office Action, Page 8). However, the "Pointer to A" in Tillier's Figure 8 is the purpose of the message, and is therefore clearly not part of an optional field of the message. Further, the pointer to A is not associated with pinned memory in a remote host, but to data in the host itself. Again, as mentioned above, nothing in Tillier teaches communications between a driver and NIC of Tillier's host 101. Tillier's disclosure of its host receiving a "Pointer to A" message fails to remedy the deficiencies of Pandya in that the combination of Pandya and Tillier clearly fail to disclose "wherein the NIC receives a message comprising an optional field carrying a STag value, the STag value being associated with pinned memory in a remote host," as recited in Applicant's dependent claim 18.

Also, with regard to Applicant's dependent claims 20, 22 and 23, the Office Action points to Tillier's steps 604-606 of Figure 6 as disclosing a NIC of a host de-associating STag values with the pinned memory in the host, with previously associated SGL information, and

otherwise freeing resources dedicated to information regarding the pinned memory. (Office Action, Pages 8-9). However, Tillier's steps 604-606 in Figure 6 and the supporting disclosure merely discuss the completion process performed at the emulation service layer 103-3 in the I/O device 103. (See e.g., Tillier, Figures 1-2 and 6; Column 8, Lines 3-15; Column 6, Lines 48-54). Put another way, Tillier's disclosure regarding its emulation service layer 103-3 in its I/O device 103 is completely unrelated to the de-association and freeing of resources performed at a NIC in the host. In fact, nowhere in Tillier is there any mention of de-association and freeing of resources performed at a NIC in Tillier's host 101. Rather, Tillier fails to describe its completion process occurring at its host. Thus, Tillier's disclosure regarding freeing resources in its I/O unit 103 fails to remedy the deficiencies of Pandya in that the combination of Pandya and Tillier clearly fail to disclose "wherein the NIC de-associates the STag value with the pinned memory in the host, thereby preventing further access to the pinned memory using the de-associated STag value," as recited in Applicant's dependent claim 20; "wherein the NIC de-associates the STag value with previously associated SGL information," as recited in Applicant's dependent claim 22; and "wherein the NIC frees any resources dedicated to information regarding the pinned memory," as recited in Applicant's dependent claim 23.

Therefore, for at least the reasons set forth above, Applicant respectfully requests that the rejection of claims 4, 5, 10, 18, 20, 22 and 23 under 35 U.S.C. §103(a) be withdrawn.

Rejections Under 35 U.S.C. §103(a) - Pandya, Tillier and Roach (Claims 6-9, 11-15 and 19)

On pages 9-16 of the Office Action, claims 6-9, 11-15 and 19 were rejected under 35 U.S.C. \$103(a) as being unpatentable over Pandya in view of Tillier and further in view of Roach et al. (U.S. Patent No. 6,304,910, hereinafter "Roach"). The Applicant respectfully traverses the rejection for at least the following reasons. Applicant believes that claims 1 and 17 are allowable over the proposed combination of references, in that Roach fails to overcome the deficiencies of Pandya in view of Tillier, for at least the reasons set forth above. Because claims 6-9 and 11-15, and 19 depend, respectively, from independent claims 1 and 17, Applicant

respectfully submits that claims 6-9, 11-15 and 19 are allowable over the proposed combination of Pandya, Tillier and Roach, as well. The Applicant further submits that each of claims 6-9, 11-15 and 19 is independently allowable. Therefore, for at least the reasons set forth above, Applicant respectfully requests that the rejection of claims 6-9, 11-15, 19, 24 and 25 under 35 U.S.C. §103(a) be withdrawn.

Rejections Under 35 U.S.C. §103(a) - Pandya and Roach (Claims 24 and 25)

On pages 16-19 of the Office Action, claims 24 and 25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Pandya in view of Roach. The Applicant respectfully traverses the rejection for at least the following reasons.

In order for a *prima facie* case of obviousness to be established, the Manual of Patent Examining Procedure, Rev. 6, Sep. 2007 ("MPEP") states the following:

The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR International Co. v. Teleflex Inc., 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

See the MPEP at § 2142, citing In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), and KSR International Co. v. Teleflex Inc., 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval). Further, MPEP § 2143.01 states that "the mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art" (citing KSR International Co. v. Teleflex Inc., 82 USPQ2d 1385, 1396 (2007)). Additionally, if a prima facie case of obviousness is not established, the Applicant is under no obligation to submit evidence of nonobviousness:

The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness.

See MPEP at § 2142.

Regarding claims 24 and 25, Applicant respectfully submits that the proposed combination of references fails to teach, suggest, or disclose at least, for example, "initiating an RDMA write operation using a one-shot initiation process between a driver and a NIC of a host, wherein the one-shot initiation process communicating a single command message comprising: buffer command information comprising commands to insert and validate an STag value, and a write command to write an RDMA send message," as set forth in Applicant's independent claim 24; and "completing an RDMA write operation using a one-shot completion process between a NIC and a driver of a host, wherein the one-shot completion process comprises communicating a single completion message comprising: a send complete indication, buffer freeing status information, and an STag value," as set forth in Applicant's independent claim 25.

The combination of Pandya and Roach is different than Applicant's independent claims 24 and 25 at least because Roach fails to remedy the deficiencies of Pandya. As discussed above with regard to Applicant's independent claim 1, because Pandya clearly discloses registering RDMA buffers before issuing the read or write command (i.e., multiple steps), Pandya cannot disclose "initiating an RDMA write operation using a one-shot initiation process between a driver and a NIC of a host, wherein the one-shot initiation process comprises communicating a single command message comprising: buffer command information comprising commands to insert and validate an STag value, and a write command to write an RDMA send message," as set forth in Applicant's independent claim 24.

Further, as discussed above with regard to Applicant's independent claim 17, because nowhere in Pandya is there any disclosure regarding the specifics of a completion process between a NIC and a driver of a host, Pandya cannot disclose "completing an RDMA write operation using a one-shot completion process between a NIC and a driver of a host, wherein the one-shot completion process comprises communicating a single completion message comprising:

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a send complete indication, buffer freeing status information, and an STag value," as set forth in Applicant's independent claim 25. Thus, because the combination of Pandva and Roach clearly fail to teach the Applicant's claim limitations as set forth in Applicant's independent claims 24 and 25, the rejection of claims 24 and 25 under 35 U.S.C. §103(a), cannot be maintained.

Therefore, for at least the reasons set forth above, Applicant respectfully requests that the rejection of claims 24 and 25 under 35 U.S.C. §103(a) be withdrawn.

Rejections Under 35 U.S.C. §103(a) - Pandya, Tillier and Futral (Claim 21)

On pages 20-21 of the Office Action, claim 21 was rejected under 35 U.S.C. \$103(a) as being unpatentable over Pandya in view of Tillier and further in view of Futral et al. (U.S. Patent No. 5.991,797, hereinafter "Futral"). The Applicant respectfully traverses the rejection for at least the following reasons. Claim 21 depends from independent claim 17. Applicant believes that claim 17 is allowable over the proposed combination of references, in that Futral fails to overcome the deficiencies of Pandva and Tillier, for at least the reasons set forth above. Because claim 21 depends from independent claim 17. Applicant respectfully submits that claim 21 is allowable over the proposed combination of Pandya, Tillier and Futral, as well. The Applicant further submits that claim 21 is independently allowable. Therefore, for at least the reasons set forth above. Applicant respectfully requests that the rejection of claim 21 under 35 U.S.C. §103(a) be withdrawn.

Final Matters

The Office Action makes various statements regarding former claims 1-25, 35 U.S.C. § 102(e), 35 U.S.C. § 103(a), the Pandya reference, the Tillier reference, the Roach reference, the Futral reference, one skilled in the art, etc. that are now moot in view of the previously presented amendments and/or arguments. Thus, the Applicants will not address all of such statements at

the present time. However, the Applicants expressly reserve the right to challenge such statements in the future should the need arise (e.g., if such statements should become relevant by appearing in a rejection of any current or future claim).

Applicant reserves the right to argue additional reasons supporting the allowability of claims 1-25 should the need arise in the future.

CONCLUSION

Applicant respectfully submits that claims 1-25 are in condition for allowance, and

requests that the application be passed to issue.

Should anything remain in order to place the present application in condition for

allowance, the Examiner is kindly invited to contact the undersigned at the telephone number

listed below.

Please charge any required fees not paid herewith or credit any overpayment to the

Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Date: August 27, 2009 Respectfully submitted,

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